

Appl. No. 09/837,503
Amdt. dated August 21, 2003
Reply to Office action of May 21, 2003

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) A fuel cell system comprising a fuel processor for converting a hydrocarbon fuel into a high temperature reformed gas containing hydrogen, carbon dioxide and carbon monoxide, first conduit means for communicating the reformed gas to a shift converter located downstream of the fuel processor for further converting the reformed gas to primarily a hydrogen and carbon dioxide containing gas stream, second conduit means for communicating the gas stream to a fuel cell downstream of the shift converter for reacting the hydrogen in the gas stream, a water source, and water feed means for feeding water from the water source to at least one of the first and second conduit means in a controlled manner for cooling at least one of the reformed gas and gas stream, respectively, to a desired temperature.

2. (original) A fuel cell system according to claim 1, wherein the water added to the reformed gas sets the desired oxygen/carbon ratio for the shift converter.

3. (original) A fuel cell system according to claim 2, wherein the water feed means includes control means for controlling the feeding of water to at least one of the first and second conduit means.

4. (original) A fuel cell system according to claim 3, wherein the control means senses the temperature of the reformed gas and gas stream, respectively, and feeds water to at least one of the first and second conduits, respectively, in response to the sensed temperature.

5. (currently amended) A fuel cell system according to claim 1, further including means for collecting water from the fuel cell and recycling at least a portion of the collected water [[as]] to the water source.

6. (currently amended) [[A fuel cell system according to claim 2]]A fuel cell system comprising a fuel processor for converting a hydrocarbon fuel into a high temperature reformed gas containing hydrogen, carbon dioxide and carbon monoxide, first conduit means for

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communicating the reformed gas to a shift converter located downstream of the fuel processor for further converting the reformed gas to primarily a hydrogen and carbon dioxide containing gas stream, second conduit means for communicating the gas stream to a fuel cell downstream of the shift converter for reacting the hydrogen in the gas stream, a water source, and water feed means for feeding water from the water source to at least one of the first and second conduit means in a controlled manner for cooling at least one of the reformed gas and gas stream, respectively, to a desired temperature, wherein the water added to the reformed gas sets the desired oxygen/carbon ratio for the shift converter, further including at least one selective oxidizer, between the shift converter and the fuel cell, and located downstream of where the water feed means feeds water to the second conduit means.

7. (original) A fuel cell system according to claim 4, wherein the control means further includes at least one solenoid valve which opens and closes in response to the sensed temperature.

8. (original) A fuel cell system according to claim 3, wherein the water feed means includes means to atomize the water.

9. (original) A fuel cell system according to claim 2, wherein at least one of the first and second conduit means includes a packing of high surface area material and the water is fed to the material.

10. (original) A fuel cell system according to claim 9, wherein said high surface area material is selected from the group consisting of ceramic pellets, steel wool, reticulated ceramic foam, metal foam, and honeycomb monoliths.

11. (original) A fuel cell system according to claim 2, wherein water is fed to both the first conduit and the second conduit.

12-16. (cancelled) .

17. (new) A fuel cell system, comprising:

a fuel processor for converting a hydrocarbon fuel into a high temperature reformed gas

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containing hydrogen, carbon dioxide and carbon monoxide;

first conduit means for communicating the reformed gas to a shift converter located downstream of the fuel processor for further converting the reformed gas to primarily a hydrogen and carbon dioxide containing gas stream;

second conduit means for communicating the gas stream to a fuel cell downstream of the shift converter for reacting the hydrogen in the gas stream; and

water feed means for feeding water to at least one of the first and second conduit means in a controlled manner for cooling at least one of the reformed gas and gas stream, respectively, to a desired temperature; and

at least one selective oxidizer positioned between the shift converter and the fuel cell, and located downstream of where the water feed means feeds water to the at least one of the first and second conduit means.

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Amendments to the Drawings:

The attached sheet of drawings include changes to Figure 1. This sheet, which includes Figure 1, replaces the original sheet including Figure 1. In this new sheet of drawings, Figure 1 has been changed so as to delete reference numeral 6 and to add a lead line for reference numeral 34 as requested by the Examiner.

Attachment: Replacement Sheet
Annotated Sheet Showing Changes